WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

International File Reference
PCT/EP04/05754

Re Point V

Reasoned statement with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:
   D1: DE 39 09 606 A
   D2: US 6 382 903 B1

2. The present application does not fulfill the requirements of Article 33(1) PCT, because the subject matter of claim 1 is not novel in the sense of article 33(2) PCT.

   Document **D1** (the references in brackets relate to this document) discloses:
   A gas turbine with a compressor,
   having an HP rotor (40, 80) rotatably mounted in a casing of the gas turbine,
   having a feed passage (60) arranged in the rotor (40, 80) and intended for feeding a fluid and having a discharge passage (86) arranged in the rotor (40, 80) and intended for discharging the fluid,
   the feed having means (70) for influencing the fluid flow, the feeding opening of the feed passage (60) lying radially further on the inside than the outlet opening of the discharge passage (86), and the means (70) for influencing the fluid flow being formed by an actuating arrangement dependent upon centrifugal force.

   In this case, the expression "dependent upon centrifugal force", in accordance with the exemplary embodiment

specified in the description, is interpreted in such a way that the actuation of the means (70) is effected as a function of speed (cf. D1, column 6, lines 3-5). In addition, radially arranged flow guides with rotatable walls are also means for influencing the fluid flow which are dependent upon centrifugal force, since the fluid throughflow depends on the vortex structure forming there.

The subject matter of claim 1 is therefore not novel.

3. D1 also discloses the technical features of independent claim 7, since a fluid for cooling the rotor always flows through during rotary operation. As explained in column 6 of D1 for an exemplary embodiment, this is the booster air below 2438 m and is the compressor tapping air mixed with the booster air above 2438 m, e.g. in gliding flight.
In general, this throughflow is provided for in virtually all aircraft gas turbines. The disclosure in D1 is therefore also detrimental to novelty for the subject matter of claim 7.

4. With regard to the independent method claim 9, D2 discloses a method of heating a rotor, through which a heating fluid can flow, of a a gas turbine, compressor outlet air for heating the HPT rotor flowing through the latter during a start-up operation carried out before the load operation of the turbomachine (cf. claim 2).

5. The dependent claims 2-6, 8, 10 and 11 contain no features which, in combination with the features of any claim to which they refer, fulfill the requirements of the PCT with regard to novelty or inventive step, see documents D1 and D2 with the corresponding passages in the text cited in the search report.

Re Point VII

Certain defects in the international application

1. In contradiction to the requirements of Rule 5.1 a) ii) PCT, neither the relevant prior art disclosed in the documents D1 and D2 nor these documents are cited in the description.